

AMENDMENTS TO THE DRAWINGS

Replace sheets 2 and 3 of the drawings (FIGs. 3 through 6) with the replacement sheets attached hereto.

REMARKS

Claims 1-8 are pending in this application. Claims 1-8 have been amended. Applicants reserve the right to pursue the original claims and other claims in this and other applications.

The drawings are objected to as failing to comply with 37 C.F.R. § 1.84(p)(4) and (5). Applicants respectfully submit replacement sheets 2 and 3 containing figures 3 through 6, and amend the specification as set forth in the “Amendments to the Specification” to obviate the objections. Specifically, reference numeral “1” designating “capillary array” (*see* page 7, paragraph beginning with “FIG. 2”, line 3) has been deleted from the written description because the numeral is not included in the drawings. The written description “window unit 16” (*see* page 8, paragraph beginning with “The capillary”, line 3) has been amended to read “window unit 7” to be consistent with the reference numeral shown in FIG. 3. Reference numeral “9” in FIG. 3 has been replaced with “29” to be consistent with the written description “aperture 29” (*see* page 9, paragraph beginning with “The load”, line 7). Numeral “23” has been deleted from FIG. 5 and FIG. 6 because it is not mentioned in the written description. Accordingly, Applicants respectfully request that the objections to the drawings be withdrawn.

Applicants further submit that the title has been amended to read “Capillary Array Having Load Header” as suggested in the Office Action.

Claims 1 and 5 are objected to for certain informalities. This objection is respectfully traversed. Applicants have amended claim 1 to replace the term “capillarys” with “capillaries” as requested in the Office Action. Applicants have also deleted the phrase “holder fixed the tubular electrodes” from claims 1 and 5. Accordingly, Applicants respectfully request that the objection be withdrawn.

Claims 1-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,885,430 (“Kernan”). This rejection is respectfully traversed.

The present invention relates to a multi-capillary electrophoresis apparatus wherein a “sample injecting end portion of [a] capillary array is provided with an insulated holder, tubular electrodes fixed to the holder, and a connection plate for connecting the tubular electrodes within

the holder.” *Specification* at page 1, lines 20-26. Moreover, a load header is allocated at the upper part of the holder and is formed of a cover for insulating contact portions of the connection plate and tubular electrodes from the other portion of the apparatus. *Id.* A “conductive portion including the contact portions of the connection plate and tubular electrodes is insulated from the other portion with the cover provided at the upper part of holder to ensure safe operation freed from discharge or electric-shock.” *Id.* at page 2, lines 12-15.

In such a structure, however, “an air-layer is formed among the connection plate, holder and cover within the load header.” *Id.* at page 2, lines 15-17. Specifically, air-layers are formed between the connection plate and holder, and between the cover and tubular electrodes within the load header, generating a heat insulation effect, which prevents the radiation of heat formed during electrophoresis. *Id.* at page 3, lines 1-4. This results in a temperature gradient depending on the location of capillaries in the load header, bringing about fluctuation in electrophoresis velocity and resolution among the capillaries. *Id.* at page 3, lines 5-8. Applicants found that when such air-layers are removed, heat generated during electrophoresis within the load header and the capillaries can be effectively radiated or extracted. *See id.* at page 3, lines 11-20.

Kernan discloses an automated electrophoresis system, wherein a tube assembly 160 (FIG. 3B) including a needle 140 and a compression fitting 164 is inserted into a plate hole 166 tapped in the mounting plate 162. *Kernan* at col. 6, ll. 38-50. The needle 140 is secured to the compression fitting 164 with an epoxy sealant and the plate hole 166 is also sealed with epoxy. *Id.* Kernan does not mention any air-layer problem or anything for solving such problem. In fact, with Kernan’s structure, the problem of an air-layer being formed among the connection plate, the holder, and the cover within the load header does not arise. Kernan fails to disclose, teach or suggest a load header including an insulating member, wherein “the insulating member covers a conductive portion including a connecting portion between the conductive connection plate and the tubular electrodes in collaboration with the insulating holder,” as recited in claims 1 and 5.

Claims 2-4 depend from claim 1 and are allowable along with claim 1. Claims 6-8 depend from claim 5 and are allowable along with claim 5. Accordingly, Applicants respectfully request the withdrawal of the rejection and allowance of the claims.

Claims 1-8 stand provisionally rejected under the judicially created doctrine of nonstatutory double patenting as being unpatentable over claims 1, 2, 18, and 19 of U.S. Application Serial No. 10/732,221 ("the '221 application"). This provisional rejection is respectfully traversed.

Claims 1 and 18 of the '221 application each recite an apparatus wherein "a heat transfer medium selected from the group consisting of solids, liquids and gels is filled in all regions between each electrode and capillary." The claims of the present application have no such limitation. For at least these reasons, claims 1-8 are patentably distinguishable over claims 1, 2, 18, and 19 of the '221 application.

In view of the above, Applicants believe the pending application is in condition for allowance.

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Respectfully submitted,

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